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| 10/736,833      | 12/17/2003  | Eun-Soo Lee          | 25611-000074/US     | 4825             |

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EXAMINER

HOLLINGTON, JERMELE M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2829

| MAIL DATE | DELIVERY MODE |
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08/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/736,833

**Applicant(s)**

LEE, EUN-SOO

**Examiner**

Jermele M. Hollington

**Art Unit**

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 3-11,15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed June 18, 2007 have been fully considered but they are not persuasive.

The applicants' argue: *"Nemoto fails to disclose 'an array of detecting means, the array of detecting means arranged and configured to detect the presence of more than one semiconductor device in one of the pockets of a supported tray by contacting at least one of the semiconductor devices in one of the pockets,' as required by amended claim 1. Similarly, Nemoto fails to disclose 'an array of detectors, the array of detectors arranged and configured to indicate the presence of more than one semiconductor device in a pocket of the supported tray by contacting at least one of the semiconductor devices in the pocket,' as required by amended claim 12. Rather, Nemoto discloses an IC detecting sensor 500 (having a light source 501 and photo-detector 502) that detects the presence of an IC in an IC carrier 16 based on the obstruction of light (generated by the light source 501) by the IC. Thus, the IC detecting sensor 500 does not detect the presence of an IC by contacting it. Although light generated by the light source 501 may be incident on the IC, it would be erroneous to interpret such interaction as contacting the IC in view of Applicant's teachings and the plain meaning of 'contact.' Additionally, to adopt such an interpretation would mean that any object (e.g., the floor) that is illuminated by the light source 501 would be erroneously construed to be in contact with the IC detecting sensor 500."*

In response to the above argument, the examiner respectfully traverses for the reasons below. In Merriam Webster's Collegiate® Dictionary 10<sup>th</sup> Edition, on page 249, left column, one definition of the word "contact" states: "an establishing of communication with someone or an observing or receiving of a significant signal from a person or object <radar ~ with Mars>" The applicants state: *"... to adopt such an interpretation would mean that any object (e.g., the floor) that is illuminated by the light source 501 would be erroneously construed to be in contact with the IC detecting sensor 500."* The examiner would like the applicants to review Figure 12. In Fig. 12, the prior art shows

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that light source 501 is directly above the photo detector 502 (shown by the arrow from 501 going into 502). With that in mind, only objects (in the prior art is the IC) that pass between light source 501 and photo detector 502 are detected. For more explanation, the prior art states: "[0078] In this embodiment, there is shown a case in which a plurality of light transmission type IC detecting sensors 500 each comprising a light source 501 and a photo detector 502 are disposed between the unloader section 400 and the loader section 300 such that the light source 501 and the photo detector 502 of each sensor 500 are opposed to each other with a plane through which a test tray TST passes put therebetween, and aligned in the direction orthogonal to the moving direction of the test tray TST, thereby to detect whether or not an IC is left on the test tray TST passing through the plane." Therefore, the examiner believes that the prior art still reads on the claimed invention.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-2 and 12-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Nemoto et al (20020036161)..

Regarding claim 1, Nemoto et al disclose [see Figs. 4-6 and 11-13] a tray transfer apparatus comprising: a transfer plate (test tray TST), the transfer plate (TST) including a plurality of tray holders (carrier compartment 14) arranged and configured for the selective support and release of a tray (IC carrier 16 in Fig. 6), the tray (16) including an array of pockets (IC pocket 19 in Fig. 6) for receiving semiconductor devices (IC); inherently a detecting substrate [not numbered see Note below] including an array of detecting means (IC detecting

sensors 500), the array of detecting means (500) arranged and configured to detect the presence of more than one semiconductor device (IC) in one of the pockets (19) of a supported tray (16) by contacting at least one of the semiconductor device (IC) in one of the pockets (19) [see also paragraphs [0078]-[0080]; wiring means (not shown) connecting the detecting means (500) to an input/output terminal (loader section 300 in Fig. 4); and driving means (transfer means 304 of Fig. 5) arranged and configured for controlled vertical and horizontal movement of the transfer plate (TST).

[Note: Although the prior art does not specifically disclose the claimed "a detecting substrate", this feature is seen to be an inherent teaching of that device since detecting sensors 500 is disclosed and it is apparent that some type of substrate must be presented for the sensors to be hold between unloader section 400 and the load section 300 to function as intended.]

Regarding claim 2, Nemoto et al disclose the detecting means (500) are detecting switches.

Regarding claim 12, Nemoto et al disclose [see Figs 4-8] an automatic test handler comprising: a plurality of tray stockers (IC storage rack 201-202) arranged and configured for receiving and positioning trays (IC carrier 16), the trays (16) including an array of pockets (IC pockets 19) with each pocket being sized and configured to receive and hold a semiconductor device (IC); a tray transfer unit (loading section 300 and unloading section 400) including a transfer plate (test tray TST) arranged and configured to transfer and position a supported tray (16), inherently a detecting substrate [not numbered see Note below] including an array of detectors (IC detecting sensors 500), an array of detectors (IC detecting sensor 500 in Figs. 11-12) arranged and configured to indicate the presence of more than one semiconductor device (IC) in a pocket (19) of the supported tray (16) by contacting at least one of the semiconductor device

(IC) in one of the pockets (19) [see also paragraphs [0078]-[0080], a detecting substrate (position means 305) and a driving means (not shown but it is inherent since some type of device is used to load and unload the tray into different apartments of the test apparatus); a tester (test chamber 102) for performing electrical tests on the semiconductor devices (IC); a first chamber (temperature chamber 101) for establishing a first temperature condition in the semiconductor devices (IC) under which the semiconductor devices (IC) will be tested, a second chamber (stress removing chamber 103) for restoring the tested semiconductor device (IC) to the normal temperature; a pick and place device (transfer means 304 or 404) arranged and configured for removing the semiconductor devices (IC) from the pockets (19) and for placing the semiconductor devices (IC) into the pockets (19); and a controller (host computer 2 in Fig. 1) for controlling the stockers (201-202), the tester (102), the tray transfer unit (300 and 400), the pick and place device (304 and 404) and the first and second chambers (101 and 103).

[Note: Although the prior art does not specifically disclose the claimed "a detecting substrate", this feature is seen to be an inherent teaching of that device since detecting sensors 500 is disclosed and it is apparent that some type of substrate must be presented for the sensors to be hold between unloader section 400 and the load section 300 to function as intended.]

Regarding claim 13, Nemoto et al disclose the controller (2) is incorporated within the tray transfer unit (300 and 400).

Regarding claim 14, Nemoto et al disclose the controller (2) generates a test stop signal corresponding to the activation status of the detectors (500).

*Conclusion*

*Allowable Subject Matter*

4. Claims 3-11 and 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter: regarding claim 3, the reason for the allowance of the claim is due to the fact a detecting switches are mechanical contact type push-button switches.

Regarding claim 4, the reason for the allowance of the claim is due to the fact the detecting switches extend through an installation holes and below a plane defined by the bottom surface of a transfer plate. Since claims 5-6 depend from claim 4, they also have allowable subject matter.

Regarding claim 7, the reason for the allowance of the claim is due to the fact the transfer plate includes a rotatable member arranged at a periphery of the transfer plate and extending above and below the transfer plate; a catch finger connected to a lower extension of the rotatable member.

Regarding claim 8, the reason for the allowance of the claim is due to the fact a control substrate for generating a control signal, the control signal corresponding to an activation status of the detecting switches. Since claims 9-11 depend from claim 8, they also have allowable subject matter.

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Regarding claim 15, the reason for the allowance of the claim is due to the fact an alarm means for generating an alarm signal corresponding to the activation status of the detecting switches.

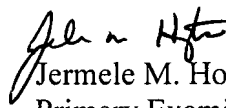
Regarding claim 16, the reason for the allowance of the claim is due to the fact a control substrate arranged and configured for providing power to the detecting substrate and for generating flash signals according to the activation status of the detecting switches.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:00 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ha Nguyen can be reached on (571) 272-1678. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH  
August 20, 2007

  
Jermele M. Hollington  
Primary Examiner  
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